

803

R-F POWER AMPLIFIER PENTODE

Filament	Thoriated Tungsten	
Voltage	10	a-c or d-c volts
Current	5	amp.
Transconductance for plate current of 62.5 ma.	4000	µmhos
Direct Interelectrode Capacitances:		
Grid to Plate (with external shielding)	0.15 max.	µµf
Input	17	µµf
Output	29	µµf
Overall Length ←		9-1/16" ± 3/16"
Seated Height		8-5/16" ± 3/16"
Maximum Diameter		2-9/16"
Bulb		T-20
Cap		Medium
Base ←		Medium Shell Giant 5-Pin Micanol, Bayonet
RCA Socket		Stock No.9927

Maximum Ratings Are Absolute Values

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

R-F POWER AMPLIFIER - Class B Telephony

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage			2000	max.	volts
D-C Suppressor Voltage (Grid #3)			500	max.	volts
D-C Screen Voltage (Grid #2)			600	max.	volts
D-C Plate Current			160	max.	ma.
Plate Input			180	max.	watts
Suppressor Input			10	max.	watts
Screen Input			20	max.	watts
Plate Dissipation			125	max.	watts
Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	40	40	40		volts
D-C Screen Voltage**	500	550	600		volts
D-C Grid Voltage (Grid #1)●O ←	-30	-35	-40		volts
Peak R-F Grid Voltage	90	70	55		volts
D-C Plate Current	130	110	80		ma.
D-C Screen Current	33	30	20		ma.
D-C Grid Current	8	5	3	approx.	ma.
Driving Power*	4.5	3.0	1.5	approx.	watts
Power Output	52	53	53	approx.	watts

* At crest of a-f cycle with modulation factor of 1.0.

O For a-c filament supply.

● Obtained from a fixed supply or from suitably by-passed cathode resistor. ←

SUPPRESSOR-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage	2000	max.	volts
D-C Screen Voltage (Grid #2)	600	max.	volts
D-C Grid Voltage (Grid #1)	-500	max.	volts
D-C Plate Current	110	max.	ma.
D-C Grid Current	50	max.	ma.
Plate Input	180	max.	watts
Screen Input	30	max.	watts

← Indicates a change. **: See end of tabulation.

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Plate Dissipation			125	max.	watts
Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	-70	-90	-110		volts
D-C Screen Voltage^	13000	17000	35000		ohms
→ D-C Grid Voltage □	-110	-100	-100		volts
	5000	5000	7000		ohms
Peak A-F Suppressor Volt.	110	130	150		volts
Peak R-F Grid Voltage	200	190	170		volts
D-C Plate Current	100	100	80		ma.
D-C Screen Current	70	70	48		ma.
D-C Grid Current	22	20	15	approx.	ma.
Driving Power	4	3.5	2.5	approx.	watts
Power Output	40	50	53	approx.	watts

^ Voltage taken from unmodulated plate-voltage supply through resistor.

→ □ From fixed supply, grid resistor (5000, 5000, 7000), or cathode resistor.

GRID-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage			2000	max.	volts
D-C Suppressor Voltage (Grid #3)			500	max.	volts
D-C Screen Voltage (Grid #2)			600	max.	volts
D-C Grid Voltage (Grid #1)			-500	max.	volts
D-C Plate Current			160	max.	ma.
Plate Input			180	max.	watts
Suppressor Input			10	max.	watts
Screen Input			20	max.	watts
Plate Dissipation			125	max.	watts
Typical Operation:					
D-C Plate Voltage	1250	1500	2000		volts
D-C Suppressor Voltage	40	40	40		volts
→ D-C Screen Voltage**	500	550	600		volts
D-C Grid Voltage	-100	-90	-80		volts
Peak R-F Grid Voltage	160	130	100		volts
Peak A-F Grid Voltage	75	65	50		volts
D-C Plate Current	130	110	80		ma.
D-C Screen Current	30	25	20		ma.
D-C Grid Current	8	6	4	approx.	ma.
Driving Power*	4	3	2	approx.	watts
Power Output	52	53	53	approx.	watts

* At crest of a-f cycle with modulation factor of 1.0.

PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Pentode Connection

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage	1600	max.	volts
D-C Suppressor Voltage (Grid #3)	500	max.	volts
D-C Screen Voltage (Grid #2)	500	max.	volts
D-C Grid Voltage (Grid #1)	-500	max.	volts
D-C Plate Current	160	max.	ma.
D-C Grid Current	50	max.	ma.

** See end of tabulation. → Indicates a change.

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Plate Input		250 max.	watts
Suppressor Input		10 max.	watts
Screen Input		20 max.	watts
Plate Dissipation		85 max.	watts
Typical Operation: ←			
D-C Plate Voltage	1250	1600	volts
D-C Suppressor Voltage	100	100	volts
D-C Screen Voltage #	18000	27000	ohms
	350	400	volts
D-C Grid Voltage ▲	-80	-80	volts
	4000	4000	ohms
Peak R-F Grid Voltage	200	190	volts
D-C Plate Current	150	150	ma.
D-C Screen Current	50	45	ma.
D-C Grid Current	30	25	approx.ma.
Driving Power	6	5	approx.watts
Power Output	120	155	approx.watts

\# From modulated fixed supply or modulated plate-voltage supply through resistor.

PLATE-MODULATED R-F POWER AMPLIFIER - Class C Telephony

Tetrode Connection - Grids #2 & #3 tied together

Carrier conditions per tube for use with a max. modulation fact. of 1.0

D-C Plate Voltage		1600 max.	volts
D-C Screen Voltage (Grids #2 & #3)		500 max.	volts
D-C Grid Voltage (Grid #1)		-500 max.	volts
D-C Plate Current		160 max.	ma.
D-C Grid Current		50 max.	ma.
Plate Input		250 max.	watts
Screen Input		30 max.	watts
Plate Dissipation		85 max.	watts
Typical Operation:			
D-C Plate Voltage	1250	1600	volts
D-C Screen Voltage ##	15000	20000	ohms
	130	130	volts
D-C Grid Voltage ▲	-180	-180	volts
	4000	4000	ohms
Peak R-F Grid Voltage	305	320	volts
D-C Plate Current	150	150	ma.
D-C Screen Current	75	75	ma.
D-C Grid Current	45	45	approx.ma.
Driving Power	15	15	approx.watts
Power Output	125	155	approx.watts

\## Preferably from unmodulated plate-voltage supply through resistor.

▲ Obtained from grid resistor of value shown, or by partial self-bias methods.

R-F POWER AMPLIFIER & OSCILLATOR - Class C Telegraphy

Pentode Connection

Key-down conditions per tube without modulation§

D-C Plate Voltage	2000 max.	volts
D-C Suppressor Voltage (Grid #3)	500 max.	volts

§ See next page.

← Indicates a change.

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D-C Screen Voltage (Grid #2)			600 max.	volts
D-C Grid Voltage (Grid #1)			-500 max.	volts
D-C Plate Current			175 max.	ma.
D-C Grid Current			50 max.	ma.
Plate Input			350 max.	watts
Suppressor Input			10 max.	watts
Screen Input			30 max.	watts
Plate Dissipation			125 max.	watts
Typical Operation:				
D-C Plate Voltage	1250	1500	2000	volts
D-C Suppressor Voltage	40	40	40	volts
D-C Screen Voltage ♦	500	500	500	volts
→ D-C Grid Voltage ■	-90	-90	-90	volts
	415	415	415	ohms
	7500	7500	7500	ohms
Peak R-F Grid Voltage	175	175	175	volts
D-C Plate Current	160	160	160	ma.
D-C Screen Current	45	45	45	ma.
D-C Grid Current	12	12	12	approx. ma.
Driving Power	2	2	2	approx. watts
Power Output	130	160	210	approx. watts

■ Obtained from fixed supply, cathode resistor (415), by grid resistor (7500), or by combination methods.

R-F POWER AMPLIFIER & OSCILLATOR — Class C Telegraphy

Tetrode Connection - Grids #2 & #3 tied together

Key-down conditions per tube without modulation§

D-C Plate Voltage			2000 max.	volts
D-C Screen Voltage (Grids #2 & #3)			600 max.	volts
D-C Grid Voltage (Grid #1)			-500 max.	volts
D-C Plate Current			175 max.	ma.
D-C Grid Current			50 max.	ma.
Plate Input			350 max.	watts
Screen Input			30 max.	watts
Plate Dissipation			125 max.	watts
Typical Operation:				
D-C Plate Voltage	1250	1500	2000	volts
D-C Screen Voltage ♦	150	150	150	volts
→ D-C Grid Voltage ⊕	-90	-90	-90	volts
	445	445	445	ohms
	3500	3500	3500	ohms
Peak R-F Grid Voltage	190	190	190	volts
D-C Plate Current	160	160	160	ma.
D-C Screen Current	15	15	15	ma.
D-C Grid Current	28	27	26	approx. ma.
Driving Power	4.6	4.4	4.4	approx. watts
Power Output	130	160	210	approx. watts

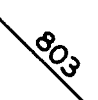
♦ Use of series resistor is not recommended.

⊕ Obtained from fixed supply, cathode resistor (445), by grid resistor (3500), or by combination methods.

← Indicates a change. §, **: See next page.

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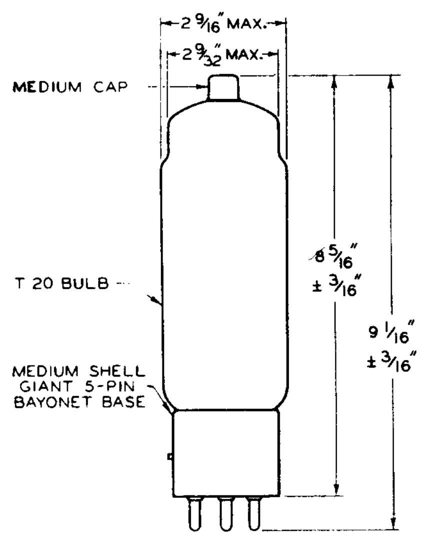
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§ Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier condition.

** Preferably obtained from a separate source, or from the plate-voltage supply with a voltage divider.

Data on operating frequencies for the 803 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY.

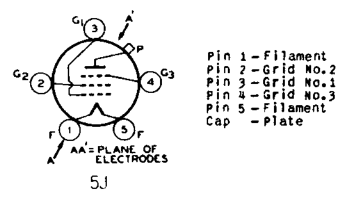


TUBE MOUNTING POSITION

VERTICAL: Base up or down.

92CM-4424R3

BOTTOM VIEW OF SOCKET CONNECTIONS



Pin 1 - Filament
Pin 2 - Grid No.2
Pin 3 - Grid No.1
Pin 4 - Grid No.3
Pin 5 - Filament
Cap - Plate

5J

← Indicates a change.



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